Based on the record before us in this rulemaking, we conclude that ISP calls meet the criteria for treatment as local calls subject to reciprocal compensation as prescribed under the Act. We conclude that on this basis alone, there are legal grounds to require that reciprocal compensation be applied to ISP-bound calls made over local phone lines. Nonetheless, in the interests of a complete record, we also examine the other factual grounds upon which reciprocal compensation for ISP traffic may be justified as laid out in the OIR. These other factual grounds include the examination of the financial and competitive impacts on both ILECs and CLECs resulting from paying reciprocal compensation for ISP traffic. We also consider the potential effects of alternative policies on ISPs and on the public at large. Based on these factual considerations, we come to the same conclusion, namely, that as a preferred outcome in carriers' negotiations for interconnection agreements, reciprocal compensation should continue to be paid for dial-up ISP traffic in the same manner as for other local traffic.

V. Should Calls to an ISP Be Treated As Local Calls as Defined by the 1996 Telecommunications Act?

We first consider as a matter of law, whether the legal requirements of the Act warrant an order that a call to an ISP be treated as local traffic subject to reciprocal compensation payments. The Act sets forth the legal framework governing carriers rights and obligations in the context of a competitive local exchange market. Among other things, the local competition provisions (in particular Sections 251 and 252) address the issue of inter-carrier compensation for the termination of local traffic.

A. Parties' Positions

The ILECs argue that calls to ISPs are interstate--not local--calls, and thus are not subject to the reciprocal compensation requirements of Sections 251 and 252 of the Act. The ILECs believe that even where callers dial a local number

to connect to an ISP, such calls to the ISP modem do not "terminate" at the modem, but continue on to remote Internet websites. Pacific views the local number used by callers to connect to the ISP merely as a routing guide for the first portion of a non-local call. The ILECs rely on the Declaratory Ruling and FCC orders addressing the "Enhanced Service Provider (ESP)[7] exemption from access charges," which, they argue, establish that calls to ISPs do not terminate in the local calling area and are typically interstate in nature.

In establishing its access charge system in 1983, the FCC decided to treat ESPs as end users, thus continuing their unregulated non-carrier status. See MTS & WATS Market Structure, 97 F.C.C. 2d 682, 711-15 (1983). It reaffirmed this "ESP exemption" in 1991. (Part 69 of the Commission's Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture, 6 FCC Rcd 4524, 4534 (1991). In 1997 it again preserved the status quo. (Access Charge Reform, 12 FCC Rcd 15982 (1997), subsequent history omitted. An ISP, by definition is an ESP and thus comes under the access charge exemption.

If the ISP access charge exemption were not in place, each carrier would be compensated by a meet-point-billing arrangement with access charges applying on both the originating and terminating side of the call. Therefore, Pacific reasons the only equitable arrangement is for carriers to apply the meet-point-bill requirements but 'exempt' ISP traffic from charges, which results in a "bill and keep" arrangement.

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[7] An "ESP" is an entity that offers "services . . . which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information." 47 CFR § 64.702(a).

Pacific also points to the FCC Declaratory Ruling in which the FCC ruled that calls to ISPs are not local. Pacific further argues that nothing in the D.C. Circuit's decision in Bell Atlantic, which remanded the FCC Declaratory Ruling for further clarification, changes the conclusion that Internet traffic is interstate in nature. The D.C. Circuit remand of the FCC Declaratory Ruling did not reverse the determination by the FCC that ISP traffic is interstate traffic; but rather, found that the FCC did not adequately explain its decision. The D.C. Circuit left the FCC free to reach the same result on remand, something it would not have done if the statute or regulations resolved the question the other way.

Pacific also points to the FCC's Advanced Services Remand Order,[8] released on December 23, 1999, in which the FCC held that ISPs provision of Internet access service is:

> . . . exchange access service because it enables the ISP to transport the communication initiated by the end-user subscriber in one exchange to its ultimate destination in another exchange, using both the services of the local exchange carrier and in the typical case the telephone toll service of the telecommunications carrier responsible for interexchange transport. (Advance Services Remand Order, § 35.)

In view of the FCC's statement in the Advanced Services Remand Order, Pacific claims it is unlikely that the FCC could determine that ISP-bound traffic is anything other than interstate exchange access traffic.

The CLECs dispute the ILECs' arguments that ISP calls are not local. The CLECs argue that the switching of a call to an ISP at the end office switch of

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[8] In the Matter of Deployment Wireless Services Offering Advanced Telecommunications Capability, CC Docket No. 98-147, Order on Remand, FCC No. 99-413 (rel. Dec. 23, 1999) ("Advanced Services Remand Order").

the carrier serving the ISP and delivery of that call by such serving local carrier to the ISP modem constitutes "termination" of the call as defined by the FCC's regulations. ICG Witness Wood testified that the method of transport and delivery of ISP-bound calls occur in the same manner as other local calls.[c] When an ILEC calling party dials the number of an ISP served by a CLEC using a local number, the call travels from the originating customer's premises to the ILEC central office switch, which then routes the call (either directly or through a tandem) to the ILEC/CLEC point of interconnection and ultimately on to the CLEC switch. From the CLEC switch, the call is then directed to the end user based on the local number dialed.

The CLECs view the ISP as the called party to whom the call is terminated, thus qualifying the serving carrier for reciprocal compensation for calls to the ISP originating on another local carrier's network. As such, the CLECs argue, the telecommunications service is terminated upon delivery of the switched call to the ISP.

The CLECs view any subsequent interaction between the ISP's modem to the Internet as being separate and distinct from the call placed by the telephone subscriber to the ISP. When a subscriber to an ISP's services calls the ISP, the ILEC subscriber purchases, and the ILEC provides, a "telecommunications service" within the meaning of the Act. The CLECs contrast this telecommunications service, which is separately rated and separately billed by the ILEC, with the functions the ISP provides as an "information service."

The CLECs argue that calls to ISPs utilizing a local phone number constitute "telephone exchange service" (i.e., local calls) as opposed to "exchange

[c] Exh. 90-ICG/Wood at 21.

access" service as defined in the Act. Telephone exchange service is defined as "service within a telephone exchange, or within a connected system of telephone exchanges within the same exchange area . . ." 47 USC § 153(47).

The CLECs argue that ISP calls come within the definition of telephone exchange service because the caller's and called party's telephone numbers are both within the same local exchange. Moreover, they argue, such calls cannot constitute "exchange access" under the Act because they do not involve "the origination or termination of telephone toll services." 47 USC § 153(16). Likewise, the ISP does not impose a separate charge apart from the caller's monthly local service charge for "telephone service between stations in different exchanges." (47 USC § 153(48).)

CLECs contend that the D.C. Circuit Court remand of the FCC Declaratory Ruling supports the CPUC existing policy on reciprocal compensation since it vacated the FCC's findings regarding the interstate nature of ISP traffic.

B. Discussion

As a beginning point for addressing whether ISP traffic should be treated as local for purposes of applying the reciprocal compensation, we note that the FCC has yet to issue any further ruling in response to the D.C. Circuit remand. The D.C. Circuit reversed the Declaratory Ruling on two separate grounds: (1) the FCC's failure to explain how its "end-to-end" jurisdictional analysis works in the context of determining whether an ISP-bound call is "terminated" at the ISP's premises and thus subject to reciprocal compensation, and (2) the failure to explain how the FCC's approach is consistent with the "telephone exchange service"/"exchange access" dichotomy. Given that the FCC Declaratory Ruling has been vacated and remanded, this Commission is not bound by those vacated findings. Federal rules do not dictate how ISP calls are to be handled by state commissions. We have the discretion to make our independent findings as to

whether such calls should be treated as local or as nonlocal for purposes of applying reciprocal compensation.

This determination is independent of the FCC's findings that ISP calls are interstate for jurisdictional purposes. As the D.C. Circuit Court stated: "However sound the end-to-end analysis may be for jurisdictional purposes, the [FCC] has not explained why viewing these linked communications as continuous works for purposes of reciprocal compensation." (206 F. 3d at 6.) As we stated in the OIR, we do not intend to reexamine the jurisdictional policy of the FCC with respect to ISP traffic. Our inquiry only goes to a reexamination of whether ISP calls should be treated as local for reciprocal compensation purposes. Our findings, however, remain subject to any subsequent rulings of the FCC that may contradict or be in conflict with the results reached herein.

We recognize that the Internet is an international network of computers, and that the transmission of data over the Internet certainly may pass beyond local exchange boundaries before it reaches an ultimate web site destination that may be located in another state or another country. The question before us, however, involves a determination of whether the various types of processing and transmission of information by an ISP over the Internet constitutes a continuation of the telephone call initiated by a local telephone customer in accessing the modem of an ISP. The answer to this question shall inform us as to whether the call to an ISP is "local" or not.

The underlying concept of "local" calls is grounded in the structure of the telecommunications network and predicted upon measurement of geographical distances between the rate centers of the telephone numbers of the calling and called parties as prescribed by the North American Numbering Plan (NANP). Under NANP rules, each telephone number is assigned to a unique rate center,

identified by vertical and horizontal coordinates, and calls are rated as local if the rate centers of the calling and called parties are within the same local calling area.

The question of whether ISP calls are local or not requires an examination of the nature of the communication and identifying the underlying means by which dial-up Internet access is accomplished and what happens after the ISP receives the call. More specifically, we seek to determine the point at which the path of the underlying telecommunications service ends. As defined by the Act, "termination" is "the switching of traffic that is subject to Section 251(b)(5) at the terminating carrier's end office switch (or equivalent facilty) and delivery of that traffic from that switch to the called party's premises." (Local Competition Order at § 1040; *see* 47 CFR § 51.701(d).)

Testimony by technical witnesses established that ISP-bound calls are, in fact, terminated by the switch at the ISP's modem bank. Pac-West Witness Goldstein testified that the telephone circuit literally terminates at the ISP's Remote Access Server (RAS), a device which combines the ISP modem bank and router functions with a bulk digital interface.[10] Pacific Witness Hamilton did not dispute that the circuit ends at the RAS, but contended that the circuit is not the "call" itself, but only the path the call travels.[11] Although the circuit may literally not be "the call," it certainly embodies the switch-related functionalities that define the call.

Pacific's witness Hamilton described the basic physical configuration used in the transport and delivery of local voice calls. Hamilton testified that a local call originates from an end user in a local exchange and terminates to an end

[10] Exh. 12-Pac-West/Goldstein at 2.

[11] Exh. 124-Pacific/Hamilton at 12-13.

user in the same local calling area. Hamilton testified that the basic configuration is the same whether the two end users are served by different LECs or by the same LEC, as long as they are both within the same local calling area. Hamilton also testified that if the end user dials a local number that is assigned to an ISP that is physically located within the local calling area, the call is transmitted to an end office in the same manner as for a local voice call. An originating end user executes a command to his or her computer modem to dial the local phone number of the ISP. This originating call is sent from the end user's modem to the local ILEC switch which hands the call off to the CLEC's point of interconnection. The call is then carried over trunks to the CLEC equipment and then on to the ISP's equipment which is often collocated with the CLEC equipment.[12]

In this phase of the proceeding, we are not addressing issues relating the use of disparate rating and routing points, since those issues have been deferred to a subsequent phase of this proceeding. Accordingly, we do not address here the implications of an ISP using a locally rated number to receive calls while having the call physically routed to the ISP at a distant point located outside of the local calling area. The implications of those sorts of arrangements will be addressed in a subsequent phase. Rather, we are concerned here with the question of what is the appropriate end point for determining whether a call is local, either the modem of the ISP or the ultimate Internet web site destination accessed by the end user.

Hamilton claimed in written testimony that the call "ends" only at the ultimate website destination.[13] Under cross-examination, however, Hamilton, gave conflicting and uncertain testimony regarding exactly where a call terminates. At

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[12] Id at 4 and 7.

[13] It at 13.

one point during cross-examination by ISP, Hamilton answered that the call terminated at the ISP modem. At another point, he said he wasn't sure where it terminates.[14] Thus, we do not find a strong convincing showing on the ILECs' part regarding the point of termination occurring somewhere out on the Internet. Instead, the overwhelming body of technical evidence supports the finding that termination occurs upon delivery of the call to the ISP.

The "termination" point of telephone call has a specific legal and technical meaning that is linked to functions performed on the PSTN. In order to conclude that ISP calls "terminate" at Internet web sites, we would have to find that the telecommunications service continues beyond the PSTN as telecommunications transmissions over the Internet, itself. Yet, the evidence indicates that PSTN and the Internet are two fundamentally different and mutually exclusive mediums of transmission, each offering two distinctly different categories of service as defined under the Act. "Telecommunications Service" is defined by the Act as the "transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." (47 USC § 153(43).) By contrast, the transmissions over the Internet can and do involve changes in the form or content of the information sent and received. The functions performed over the Internet more properly comprise what the Act defines as an "information service." Specifically, the Act defines an "information service" as "the offering of a capability for generating, acquiring, storing, transforming, processing retrieving, utilizing, or making available information via telecommunications [.]" (47 U.S.C. § 153(20).)

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[14] See cross-examination transcript references summarized at pages 24-26 of ICG Opening Brief.

Thus, while an information service provider may make use of a telecommunications service, the two services remain mutually exclusive.

In the FCC's Report and Order In Re Federal-State Joint Board on Universal Service, 12 F.C.C.R. 8776 (Released May 8, 1997) ("Report and Order"), the FCC concluded that "Internet access consists of more than one component." (*Id.* at ¶ 83.) The FCC reasoned that "Internet access includes a network transmission component, which is the connection over a [local exchange] network from a subscriber to an Internet Service Provider, in addition to the underlying information service." (*Id.*)

The FCC has found that "Internet access services are appropriately classified as information, rather than telecommunications, services." Report to Congress in re Federal-State Joint Bd. On Universal Service, FCC 98-67 at ¶ 73 (Released April 10, 1998). The FCC affirmed that the categories of "telecommunications service" and "information service" are mutually exclusive. The FCC further concluded that: "Internet access providers do not offer a pure transmission path; they combine computer processing, information provision, and other computer-mediated offerings with data transport." (*Id.*)

We conclude that ISP communications thus involve two separate functions: (1) a telecommunications service, and (2) an information service. The telecommunications function terminates at the ISP modem while the subsequent processing performed by the ISP beyond the modem is an "information service." The telecommunications service provided over the PSTN and the information service provided over the Internet are thus separate and mutually exclusive entities, and are not jointly two parts of the same "call."

The PSTN and the Internet are also separate and distinct in terms of differences in how the underlying transmissions are processed and delivered. The PSTN involves discrete single circuit switched transmissions. The definition of

call termination as used under the Act is inextricably linked to the switching of traffic at an end office. The end office switching is not an intermediate step, but signifies that termination has occurred upon delivery of the traffic to the called party's premises.

As we previously noted in D.98-10-057, however, in contrast to a telecommunications service, "[t]he Internet is a distributed packet-switched network . . . [where the] information is split up into small chunks or 'packets' that are individually routed through the most efficient path to their destination." (D.98-10-057 at 10.) Thus, the circuit-switched telecommunications signal initiated by the calling party does not continue on beyond the ISP. Instead, the ISP initiates a second packet-switched transmission to the Internet. The packet-switched transmission is not simply a continued "routing" of the telephone call delivered to the ISP, nor is it even a single "call" over the Internet or other packet-switched network. Packets may be sent (continuously or sporadically) from the ISP to a website or server, and received by the ISP from a website or server, over many different routes and reassembled before delivery to the subscriber.

The caller's modem and the ISP's modem communicate with each other via the local telephone connection, and the ISP validates the connection with a password or other authentication option. Depending upon when, if at all, the end user chooses during the course of the local connection to the ISP to access the Internet, any transmission by the ISP to the Internet backbone may be initiated long after the subscriber's local call is delivered to the ISP's modem.

The end user that has called the ISP, on the other hand, may not necessarily seek access to any remote web site, but may simply desire access to a local e-mail server or the "home page" or other information that has been stored or

"cached" locally by the ISP.[15] If the end user does wish to communicate with a different website, the ISP provides for communications from its router over the Internet backbone, which entails further protocol conversions and interaction with and retrieval of locally stored or "live" information accessible through the other website. However, as testified by witness Terkeurst, such communications are independent of the calling party's use of telecommunications, and are not on the PSTN. Thus, on this basis we find that the ISP's information processing over the Internet is separate and distinct from the basic telecommunications service that the ILEC subscriber uses to call the ISP.[16]

Another relevant factor identifying the terminating point of the call is that the ISP is the "called party." This finding agrees with the D.C. Circuit Court which found that "the traffic is switched by the LEC whose customer is the ISP and then delivered to the ISP, which is clearly the 'called party'" (206 F.3d at 6.) Just because subscribers use the ISP to gain access to the Internet, the ISP does not cease to be the called party. The D.C. Circuit court noted that an ISP is no different from a variety of communication service businesses that use various communications services to provide goods and services. The Court explained that although the ISP may be an intensive user of communications services in providing Internet access, the ISP still has originated a communication that is separate and distinct from the ILEC subscriber's call to the ISP.

Specifically, the D.C. court stated:

> The [FCC] has not satisfactorily explained why an ISP is not, for purposes of reciprocal compensation, "simply a

[15] Exh. 12 Pac-West/Goldstein 1-2; 6-8; 11-13.

[16] Exh. 60 Focal/TerKeurst at 13.

> communications-intensive business end user selling a product to other consumer and business end-users."
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> . . . [T]he mere fact that the ISP originates further telecommunications does not imply that the original telecommunication does not "terminate" at the ISP. However sound the end-to-end analysis may be for jurisdictional purposes, the [FCC] has not explained why viewing these linked telecommunications as continuous works for purposes of reciprocal compensation.[17]

In addition, the singular identity of the "called party" only makes sense if the ISP is identified as the called party. If, on the other hand, multiple web sites are deemed to be the called party(ies) to whom the call is delivered, there is no unique party, and thus no coherent way to ascertain a single termination point for purposes of evaluating calling distance, or whether the call is local or not. The typical Internet "call" frequently involves interactions with multiple points.[18] Some may exist locally in the ISP server while some may be in another country. Thus, the single end-to-end call analogy derived from descriptions of standard long distance voice calls is not schematically accurate nor workable in the context of ISP-bound local calls from either a technical or legal perspective. The called number belongs to the ISP, not to any of the web sites that may be visited during an Internet session. While each web site has its own unique web address, the web site has no identification with the telephone number dialed to access the ISP. Logic therefore dictates that upon completion of the end office switching function and delivery of the traffic to the ISP, the "called party" has received the call, and

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[17] Bell Atlantic, 206 F.3d at 7.

[18] Exh. 12-Pac-West/Goldstein at 12.

call termination has occurred. In the case of an ISP call, we thus find that the ISP is the "called party."

The ILECs have failed to show that the telecommunications services used to access ISPs continue over the Internet. The ILECs' reliance on the FCC Declaratory Ruling provide no basis upon which to support the claim that ISP calls do not terminate upon delivery to the ISP. While the D.C. Circuit left open the opportunity for the FCC to provide a rationale as to why its end-to-end analysis used for jurisdictional purposes was relevant in the context of reciprocal compensation, the FCC has not provided such a rationale to date. Absent such a further showing, the FCC's previous determination on this point remain vacated, and do not justify treatment of ISP calls as interstate for purposes of intercarrier compensation.

The FCC Advanced Services Remand Order, as cited by Pacific, also fails to provide a convincing basis upon which to conclude that ISP calls should not be treated as local. The FCC Advanced Services Remand Order stated that "to the extent that the LEC-provided portion of such traffic may not fall within the definition of 'exchange access,' the predominantly inter-exchange end-to-end nature of such traffic nevertheless renders it largely non-local for purposes of reciprocal compensation obligations of Section 251(b)(5)."

While making this assertion, however, nothing in the Advanced Services Order addresses the unanswered questions raised by the D.C. Circuit Court which vacated the FCC's previous findings regarding the rationale for treating ISP calls as nonlocal for reciprocal compensation purposes. The D.C. Circuit Court had found that the cases relied on by the FCC in the Declaratory Ruling seeking to draw an analogy between interexchange telephone service and

ISP Internet packet-switched transmissions to web sites were "not on point."[18] Correspondingly, the Advanced Services Order merely repeats similar assertions without any new rationale responsive to the D.C. Court inquiry. Thus, until or unless the FCC provides a rationale for applying its end-to-end analysis to reciprocal compensation requirements as directed by the DC Circuit Court, we find no basis to rely on the FCC Advanced Services Order statement that Internet traffic is "predominantly interexchange."

We thus find that calls to ISPs meet the criteria for treatment as local calls when the called number is rated as local based on the proximity of rate centers serving the calling and called party. The Act mandates reciprocal compensation for all calls that are classified as local. Since ISP calls are deemed local as defined by the Act, then such calls are subject to reciprocal compensation. We thus find that reciprocal compensation is warranted for ISP-bound calls to a local number by virtue of the requirements of the Act. In the interests of a complete record, however, we independently consider whether other factual grounds support the reciprocal compensation policy.

VI. Assuming that the Reciprocal Compensation Provisions of the Act are not applicable to ISP Traffic, Do Other Factors Justify Reciprocal Compensation for ISP Traffic?

A. Effects of Reciprocal Compensation Policies on Incentives to Promote Competition and Economic Efficiency

1. Parties' Positions

The ILECs argue that reciprocal compensation for ISP calls is detrimental to competition because it results in asymmetrical windfall profits to

[18] Bell Atlantic F.3d at 6.

CLECs, providing the CLECs with an unfair competitive advantage. Pacific's and Verizon's customers originate several times more traffic destined for ISPs served by CLECs compared with the volume of originating CLEC calls that are destined for ISPs served by Pacific and Verizon. As a result, the ILECs claim they pay out considerably more reciprocal compensation to CLECs than they receive in return for ISP traffic. During 1999, Pacific claims that it sent 833 minutes of ISP-bound traffic to CLECs for every one minute of ISP-bound traffic sent by a CLEC to Pacific. Moreover, Pacific's measurements indicate that 73% of all CLEC traffic during 1999 was attributable to ISP-bound calls. Similarly, Verizon reports that CLECs have billed it for $32 million in ISP-related reciprocal compensation over the most recent 18 month period while Verizon has billed CLECs for only $0.4 million.

The ILECs claim that instead of increasing competitive alternatives to customers, ISP reciprocal compensation actually reduces CLECs' incentive to serve residential customers. The ILECs claim the CLECs instead have simply rushed to serve ISP customers who generate one-way traffic that ensures a steady stream of reciprocal compensation payments, and an opportunity for arbitrage due to the unintended consequences of regulation. Since ISPs originate very little traffic, CLECs pay only very small streams of ISP-related reciprocal compensation payments in the direction of the ILECs. By contrast, regular voice traffic tends to flow more evenly in both directions, creating a more balanced exchange of reciprocal compensation payments between carriers.

Pacific claims that paying reciprocal compensation to CLECs for this asymmetrical ISP traffic flow runs contrary to the goal of promoting competition, particularly in the residential market. Pacific claims the current system actually disincents CLECs from serving residential customers, because the CLECs would have to pay reciprocal compensation to other carriers. Pacific claims that

residential customers that call the Internet become huge liabilities to originating carriers, retarding the growth of residential competition. Pacific also claims that CLECs have little incentive to develop new technologies for offering Internet access since doing so would reduce the flow of reciprocal compensation CLECs currently enjoy.

The CLECs do not dispute that a disproportionate share of ISP traffic is terminated by CLECs in contrast to the share terminated by ILECs. The CLECs, however, do not attribute this fact to anticompetitive arbitrage or to improper incentives. Rather, the CLECs view this outcome as a result of positive competitive forces. The CLECs argue that applying reciprocal compensation payments to ISP-bound traffic is conducive to competition, creating a strong incentive for ILECs to become more cost efficient and creating a basis for CLECs to build their business. Conversely, the CLECs argue that eliminating reciprocal compensation would harm local competition.

Focal argues that withholding reciprocal compensation for ISP-bound traffic would penalize CLECs for successfully competing for ISPs by precluding them from recovering the cost of terminating calls to those customers, thus discouraging CLECs from serving ISPs and limiting the competitive choices available to ISPs. Withholding reciprocal compensation for ISP-bound calls could also harm competitive LECs because it would limit their ability to rely on the high call volumes received by ISPs to reduce their per-unit costs and develop the economies of scale and scope currently enjoyed by incumbent LECs and needed to effectively compete with incumbent LECs. Finally, the Commission should take special note of the possibility that moving to bill-and-keep could have adverse consequences for the Internet, which would have significant consequences for the California economy.

CISPA argues that eliminating ISP reciprocal compensation will only bolster ILEC efforts to assert control over California's ISP market. CISPA argues that ILECs and their internet affiliates have specific designs on the internet services market in California. Patterns of discrimination against independent ISPs have already developed in Pacific Bell's service territory. CISPA claims ISPs in California have experienced service quality or other problems as reported in a national ISP survey, demonstrating serious problems with Pacific Bell's ability to serve ISPs and their end users. The evidence demonstrates, at a minimum, the value which independent ISPs place on competitive choice.

CISPA argues that ISPs do not have sufficient safeguards protecting them from ILEC discrimination or misconduct. As end users of telecommunications services, ISPs do not have the benefit of telecommunications laws and regulations developed to ensure competition among telecommunications carriers. ISPs lack recourse for an ILEC's decision to delay network capacity upgrades. The absence of relief for ISPs means that Pacific (or its affiliate SBC Advanced Solutions, Inc.) can delay installation of facilities such as a Digital Subscriber Line Access Multiplexer ("DSLAM") in a central office until its affiliated ISP has secured a customer base to fill the available ports in that DSLAM. Meanwhile, Pacific (or SBC Advanced Solutions, Inc.) remains free to ignore the pending orders of independent ISPs for DSLAM ports. Additionally, independent ISPs do not know how Pacific shares an ISP's customer proprietary network information ("CPNI") with its affiliates; however, it appears that this information is exchanged with Pacific's internet affiliate for purposes of marketing.

2. Discussion

We find no evidence that the continuation of the existing policy calling for the payment of reciprocal compensation for ISP traffic will impair incentives for LECs to compete in an economically efficient manner. Under the

present policy there has been a growth in the choice of telecommunications service providers among ISPs. The availability of greater choice in the availability of service providers is good for competition. We find no convincing evidence that our present reciprocal compensation policies are to blame for the fact that there hasn't been greater progress in the development of competition among residential customers. The fact that the customers of the ILECs originate the overwhelming majority of calls to ISPs is to be expected given that the vast majority of the residential customer base continues to be served by ILECs. As noted by the CLECs, there are a number of constraints that have been identified as contributing to the CLECs' failure to garner a larger share of the local residential market. Many of these constraints are being examined by the Commission in connection with the Commission's "271 Proceeding," which involves review of a checklist of factors affecting the competitiveness of the local market.[20] We find no basis to conclude that the CLECs would become more active in the residential market if bill-and-keep was substituted for reciprocal compensation for ISP calls.

We find no basis to conclude that our reciprocal compensation policy merely creates an incentive for CLECs to sign up ISPs for the purpose of arbitraging "windfall" profits. To the extent that certain CLECs have a financial incentive to sign up ISPs, the CLECs are not simply arbitraging profits, but provide a legitimate service to the customers of ILECs by delivering their calls to ISPs. We examine in more detail below the allegations that reciprocal compensation results in a "windfall" to CLECs. The fact that certain CLECs have focused a much greater share of their target market on serving ISPs in comparison with ILECs is not, in itself, an anticompetitive result. Although niche markets may develop with

[20] R.93-04-003/I.93-04-002; R.95-04-043/I.95-04-044.

certain carriers specializing in serving certain market segments such as ISPs, this process can actually promote a more diverse and dynamic competitive market.

By contrast, we are concerned that the elimination of reciprocal compensation could trigger undesirable consequences that would not be conducive to competition. CLECs would be faced with the choice of either raising their rates to ISPs to make up for the lost reciprocal compensation, or else curtailing service to ISPs if that segment of the market became unprofitable. ISPs, in turn, would face reduced competitive choices for their local exchange service or paying higher local telephone rates. ISPs may become more dependent on the ILECs for their service. Yet, the ILECs may choose to give priority to their own ISP affiliates. In the event of inferior service from ILECs, ISPs would have less recourse to seek competitive alternatives. The ILECs thus would have less incentive to improve the quality of their service to ISPs in order to avoid losing their business to CLECs. The CLECs' loss of reciprocal compensation revenues could also lead to higher telephone charges to ISPs to make up the shortfall. Subscribers of ISPs would face the prospect of potentially higher ISP subscription fees, or per-minute charges, to the extent ISPs sought to pass through any local telephone service rate increases to their own subscribers.

B. Can ISP Traffic Be Accurately Identified and Segregated from other Traffic ?

1. Parties' Positions

Parties dispute whether ISP-bound traffic can be accurately measured and readily segregated from other local traffic on an ongoing basis for purposes of applying a different compensation method from other traffic. If ISP calls were to be excluded from reciprocal compensation payments, some method would be needed to properly identify and segregate ISP calls from other calls subject to the payment of reciprocal compensation.

The CLECs argue that the lack of any reliable system for accurately segregating ISP-bound traffic from other traffic points up the impracticality of imposing a different compensation method for ISP versus other local traffic. The CLECs argue that any attempts to ascertain from customers whether they are using a particular line for ISP purposes would intrude on the privacy of callers. The CLECs also argue that denial of reciprocal compensation would be discriminatory and impractical to implement since calls to ISP are functionally identical to voice-grade calls and cannot be separately identified for billing purposes.

Pacific believes that ISP traffic can be reasonably identified, and is currently making efforts to do so. The CLECs have already been ordered by the Commission to keep track of this ISP-bound traffic. Pacific's intent is merely to track ISP-bound calls in the aggregate so that no customer's privacy is compromised. Pacific also notes that in their filings with the Securities & Exchange Commission, various CLECs have been able to specifically identify the number of their ISP customers. For example, Pac-West states that it is "a leading supplier of Internet access and other Internet infrastructure services in California serving 78 Internet service providers."[21] ICG states that at the end of 1999 it had "approximately 550 ISP customers."[22] Moreover, these CLECs specifically direct their marketing activities at ISPs.[23] Thus, Pacific argues that with the exception of a few minor "grey areas," CLECs are readily able to identify ISPs.

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[21] Exh. 14 (Pac-West's Form 10-K, filed Mar. 30, 2000), p. 4.

[22] Exh. 8 (ICG Form 10-K), p. 1.

[23] *See, e.g.*, Exh. 85 (Focal's "Products & Services" webprint@ www.focal.com); Exh. 156 (Pac-West website printout, "Internet Service Providers").

Pacific developed independent estimates of the volume of ISP traffic that has been terminated by CLECs for this proceeding. The source for Pacific's figures for an ISP-bound traffic was a study identified as the "Barry Lear Study." The Lear study used a four-step method to identify ISP traffic terminated by CLECs. The four steps are as follows:

1. Pacific developed a list of ISP telephone numbers by searching the Internet for ISP advertisements or Web sites that identified a telephone number of its service;
2. For identifying additional Internet traffic, Pacific applied the selection criteria that calls to a ISP telephone number would be those which receive more than 200 calls per day, or average more than 25 minutes of conversation time per call;
3. Pacific verified the suspected ISP numbers by calling the number to determine that a machine tone was received on the line;
4. Pacific next compared the list of ISP numbers to match with the codes or prefixes for each CLEC.

Pac-West disputes the reliability of Pacific's figures measuring the volumes of ISP-bound traffic it has sent to CLECs. Pac-West claims each of the four steps creates significant opportunities for errors and misclassification of traffic, both in terms of false positives and false negatives. Pac-West argues that step (1) does not capture all of the telephone numbers that ISPs use to terminate calls. Pacific may miss certain advertised numbers, and new ISP dial-up telephone numbers are being introduced all the time. Moreover, some ISP dial-up telephone numbers may not be publicly advertised in mass-market sources, or the numbers may be grandfathered to existing subscribers and thus no longer advertised. In addition, Pac-West argues that many ISPs employ shared modem pools in which the same telephone numbers are used for ISP and non-ISP purposes, so that attempting to classify such a number as terminating either only ISP-bound traffic

or only non-ISP bound traffic will necessarily fail. Pacific witness Jacobsen was unable to validate the legitimacy or accuracy of this step, and admitted that he did not know what qualifies somebody to be an ISP.

Pac-West claims step (2) in the study only creates further problems. By assuming that ISP dial-up numbers will have average call durations exceeding 25 minutes or will receive more than 200 calls per day, Pacific excludes all dial-up calls to ISPs below these thresholds that were not already detected in step (1). Pac-West argues that by filtering in this arbitrary fashion, Pacific guarantees that the sample of ISP calls are non-random and biased toward higher volumes and longer durations. Pacific also includes non-ISP calls that meet the thresholds described in step (2).

Pac-West also criticizes step (3), in which Pacific assumes that hearing a machine tone on a called line means that the line terminates to a modem that will always provide a connection to the Internet. Pac-West states this is clearly not the case.

Verizon has not historically tracked originated or terminated calls that were specifically identified as ISP-related. Verizon witness, Beauvais, claims, however, that if the telephone numbers assigned to ISPs are known, that CLECs should be able to track precisely the amount of delivered traffic that it ISP-bound. In any event, Beauvais believes that useful estimates of ISP-bound traffic by carrier can be developed based upon an algebraic formula utilizing call duration as a defining variable.[24] Based on Verizon data from North Carolina and Michigan, observed duration for Verizon to CLEC calls ranged from 15 to 45 minutes while the duration for calls from CLEC to Verizon ranged from only 3 to 4 minutes.

[24] Exh. 78-Beavais for Verizon at 16.

Beauvais observed that the available California data yields consistent results with a range from 3.5 minutes to 8.7 minutes for traffic inbound to Verizon customers whereas the duration for outbound traffic to CLECs ranged from 8.5 minutes to 23.2 minutes. Beauvais views the duration differences as being largely attributable to the disproportionate ISP-related business of the CLECs.

Pac-West disputes the reliability of Verizon's claims concerning the ability to accurately measure ISP-bound traffic, arguing that its study relies on two critical assumptions that are not correct. First, the study assumes that duration of two categories of calls--voice and ISP-bound traffic--are known with sufficient precision. The second assumption is that there are only two categories of calls to be distinguished. Pac-West further argues that range of potential outcomes resulting from Beauvais' algebraic formula is too broad to be used to produce a meaningful measure of ISP-bound calls or minutes. Pac-West notes that the range of possible variation in the percentage of ISP-bound minutes in Beauvais' formula is over 20%. The percentage of ISP-bound calls derived from Beauvais' formula could thus range between 39.8% and 60.9% of total minutes at a 99% confidence interval. Applying the Verizon methodology to the total quantity of minutes handled by Pacific, Pac-West computes that the range of possible outcomes for ISP-bound minutes could vary by 5.2 billion minutes, as noted in the table below:

TABLE 1:

VARIABILITY OF MINUTE CATEGORIES USING VERIZON FORMULA

Pacific Bell estimate of total local traffic (in calls): 51 billion
(1 billion ISP-bound, 50 billion all other)[25]

Voice Calls:		
3.6 minutes/call × 50 billion calls	=	180B minutes
6.2 minutes/call × 50 billion calls	=	310B minutes
Range of Variability	=	**130B minutes**
ISP-bound Calls:		
39.4 minutes/call × 1 billion calls	=	39.4B minutes
44.6 minutes/call × 1 billion calls	=	44.6B minutes
Range of Variability	=	**5.2B minutes**

[25] *See* Exh. 81 (Sensitivity Analysis) where details of the sensitivity analysis are set forth.

Verizon argues that although the use of statistical techniques would result in certain individual voice calls being classified as ISP-bound calls and vice versa, that is not in itself a justifiable reason to refrain from using these techniques. The Commission and the CLECs have been willing to use estimation techniques in a variety of circumstances, notwithstanding that the process does not identify each call. For example, existing interconnection agreements between Verizon and CLECs employ a statistical estimation technique to separate local traffic from toll.[26]

Verizon also argues that parties could conduct traffic studies that sample traffic flowing between ILEC and CLEC to determine a reasonable figure for ISP traffic. Verizon believes parties could readily identify their own ISP customers.

2. Discussion

We address the question concerning the extent to which ISP traffic can be accurately measured for three purposes. First, we consider the question from the standpoint of the accuracy of the ILECs' representations concerning the extent of the imbalance in ISP traffic between the ILECs versus the CLECs. Second, we consider the question from the standpoint of the implications of those measures in terms of the potential financial effects, both on the CLEC and the ILEC. Third, we consider the question from the standpoint of whether a practical method exists to segregate ISP traffic from other traffic for the purpose of applying a bill-and-keep treatment, or some other different treatment in comparison with other types of calls.

With respect to the first question, we acknowledge that there are statistical limitations in the estimation techniques used by Pacific and Verizon in

[26] Exh. 79-Beauvais for Verizon at 17.

seeking to quantify the magnitude of minutes terminated by CLECs. Yet, the purpose for which these estimates were presented were merely to provide some order of magnitude of the huge asymmetry between ISP calls terminated by CLECs versus ILECs. The ILECs could only infer through indirect means how many terminating minutes of the CLECs involved access to the Internet.

We find the measurement of ISP traffic derived from Pacific's "Barry Lear Study" to be unreliable. Due to its absence from the record, the specifics of the study are not known, such as precise dates of traffic data used, amount of sampling and sampling techniques used, confidence level of the resulting data, etc. Moreover, on cross-examination, Mr. Scholl revealed that certain data proffered by Pacific, such as call completion rate for ISP calls, were derived from a separate engineering study. This study, like the Lear Study, also was never submitted for the record. Pacific witness Scholl, while admitting that he did not participate in or review the engineering study, or use it for any of the Pacific cost studies he performed, stated that it involved only 34 (unspecified and not randomly selected) out of 900 end offices.[27]

In the case of their own ISP customers, the ILECs had access to more direct and specific record of call termination. Yet, even here, some questionable assumptions and approximations were involved in reporting the results. Even if we take into account the potential measurement bias and statistical limitations pointed out by the CLECs, the ILECs estimates still provide rough approximations of the differences between CLEC and ILEC terminations of ISP traffic. We are still left with the conclusion that there is a very large asymmetry between CLEC and ILEC terminations, even if it cannot be quantified precisely.

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[27] See Tr. at 1283-1286.

With respect to the question of financial impacts of the asymmetrical flow of traffic, we address that question separately in Section VI.D.

With respect to the question of whether ISP traffic could be separately measured and segregated from other traffic for intercarrier billing purposes, we conclude that such results as presented by the ILECs are too imprecise to be useful. As noted above, the range of possible outcomes using Verizon's estimating methodology produces a range of 130 billion minutes for Pacific and 5.2 billion for Verizon. As we noted above, the ILECs have demonstrated that it may be possible to achieve some approximation of the amount of ISP traffic flows only on a broad level. For example, the ILECs have provided examples of published financial reports of the CLECs in which specific numbers of ISP customers served are identified. By inference, the CLECs must have some means of identifying those customers acting as ISPs in order to identify them in their published financial reports. The question is whether any approximation that could be measured would be reasonably accurate enough to be used for intercarrier billing purposes. We conclude that the range of variability in the estimates presented in this proceeding is too broad to serve as a basis for billing purposes.[28]

Beavais' methodology addressed only the proportion of calls that have longer durations, not the proportion of calls that are ISP-bound calls. Such a

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[28] See Exh. 12 at 13 (Pac-West/Goldstein), where Goldstein testifies that it is impossible to correctly identify each ISP-bound call or Internet-bound call for several reasons, including that ISPs in the United States are not licensed or regulated, the cost of entry is low, and the cost of exit is also low. He testified that: "While some ISPs are very visible and advertise widely, others are small, market to affinity groups, and operate 'beneath the radar' of the larger carriers. They are not obligated to report themselves, so it would be difficult if not impossible to identify all ISPs in operation in any location at any given time, or to accurately track their access traffic."

methodology based solely on call duration to determine the proportion of ISP-bound calls is inherently unreliable because it fails to exclude classes of long-duration calls other than ISP-bound calls (*e.g.*, telecommuting and other calls to corporate LANs, business conference calls, calls to airline reservations offices, etc.). Witness Beauvais appeared to acknowledge, however, that under his methodology, calls other than those bound for ISPs would be treated as part of the ISP-bound aggregate based on their holding times, and he offered no reliable solution for the problem.[29]

Aside from the difficulties in accurately measuring calls delivered to ISPs, an additional measurement difficulty involves distinguishing calls to ISPs which actually involve transmissions over the Internet. As Pac-West witness Goldstein testified, of the calls that are actually made for the purpose of using the Internet, many of them are carried out with no actual connection to the Internet, only a temporary Internet connection, or intermittent connections. When not connected to the Internet, the end user may be connected only to the local server of the ISP or to the ISP modem. As testified by witness Terkeurst, various ISP services utilized by a subscriber would not entail connection to the Internet. For example, retrieving e-mail typically only involves accessing the ISP's local e-mail server. Another example could entail viewing web pages that have been locally stored (i.e., cached) on the server of the ISP. No party has proposed a means by which the minutes of usage for ISP communications can be delineated between those that actually involve connection to the Internet versus those that remain locally with the ISP. Without some means of segregating such minutes of use, measurement process used for billing purposes would yield inaccurate results.

[29] Tr. 757-760.

C. Does the payment of Reciprocal Compensation to CLECs for Terminating ISP Traffic Constitute a "Windfall"?

1. Overview of Parties' Positions

As one of the reasons supporting their opposition to the payment of reciprocal compensation for ISP traffic, the ILECs claim that it results in windfall profits and subsidies to the CLECs. The ILECs claim that the reciprocal compensation rate paid for local traffic significantly exceeds the actual costs incurred by the CLEC to deliver a call to an ISP, resulting in "windfall" profits. The ILECs claim that since the reciprocal compensation rates are predominantly based on the termination costs for local voice calls, the application of the same rate to ISP calls significantly overcompensates the CLECs. Pacific claims that at least 50% of reciprocal compensation revenues paid to CLECs constitute pure profit, and possibly even more. (Scholl Exh. 106, pp. 19-23.)

The ILECs attribute the lower costs of delivering ISP traffic to differences in the type of facilities and processes used in comparison with those used by the ILECs that are used for delivering voice traffic, as well as to differences in the characteristics of ISP calls, themselves. The ILECs claim that ISP calls (1) are longer, on average, than voice calls; (2) exhibit a higher call completion ratio than voice calls; (3) are made to called parties that are likely to be collocated with the CLEC; (4) require more ILEC tandem switching and transport than voice calls; (5) represent traffic that is aggregated by the ILEC before being delivered to the CLEC; and (6) can be switched by the CLEC at a lower cost than voice traffic. By being required to pay reciprocal compensation rates based upon the higher costs of terminating voice traffic, the ILECs argue, the resulting payments constitute a "subsidy" to CLECs and result in "windfall" profits.

The CLECs argue that the ILECs' "windfall"/"subsidy" argument is inconsistent and cannot be reconciled with the FCC's determination that symmetrical compensation should be applied to all local traffic.

The FCC First Report and Order provided for the payment of reciprocal compensation for local traffic based on "symmetrical rates based on the incumbent LEC's costs for transport and termination of traffic . . . " *Id.* at ¶ 1089; *see*, 47 C.F.R. § 51.711(a).

The CLECs also deny that their ISP termination costs are lower than costs for other traffic termination and claim the ILECs misconstrue the manner in which CLEC switches have been deployed. ICG claims the alleged differences in call completion ratios, digital to analog conversions and other purported differences between ISP-bound calls and non-ISP-bound calls, even if they could be accurately determined, are irrelevant to a proper determination of terminating switching costs for such traffic. ICG attributes each of the individual arguments made by the ILECs in attempting to distinguish costs associated with ISP-bound traffic from other types of traffic as either (a) factually inaccurate, (b) irrelevant to the derivation of traffic sensitive costs, or (c) already accommodated by the rate structure included in interconnection agreements."

2. Discussion

The Act prescribes an overall framework by which carriers are to be compensated for their costs of providing competitive local exchange telecommunications services. There are three general categories of service that a LEC provides. These are (1) connecting its own customers to the telecommunications network; (2) permitting its own customers to originate traffic destined for customers of its own (or other LECs') networks; and (3) terminating traffic destined for its own customers that was originated by customers of its own (or those of other LECs). (Starkey/pg.17-18).

Under the Act, reciprocal compensation only applies to the third category of service, namely the termination of calls. Specifically, reciprocal compensation is intended to cover the "traffic-sensitive" costs incurred for transport and termination of local traffic, that is, those costs that vary directly as a function of the traffic usage involved with the call. As prescribed in its Local Competition Order (§ 1057), the costs of terminating traffic that are not traffic sensitive (e.g., local loops and line ports), are not to be included in the reciprocal compensation allowance. Instead, these costs must be recovered from each carrier's own end-use customers. The FCC has determined that such reciprocal compensation obligations "apply only to traffic that originates and terminates within a local area;" they "do not apply to the transport or termination of interstate or intrastate interexchange traffic." (Local Competition Order 11 FCC Rcd. 15499, 16013, § 1034 (1996).)

The FCC has defined "transport" in this context "as the transmission of terminating traffic that is subject to Section 251(b)(5) from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party (or equivalent facility provided by a non-incumbent carrier)." (Local Competition Order at § 1039, see 47 CFR § 51.701(c).) "Termination" is defined as "the switching of traffic that is subject to Section 251(b)(5) at the terminating carrier's end office switch (or equivalent facility) and delivery of that traffic from that switch to the called party's premises." (Local Competition Order at § 1040; see 47 CFR § 51.701(d).)

FCC rules implementing the 1996 Act call for the use of the Total Element Long Run Incremental Cost (TELRIC) of the ILEC as a proxy for CLEC costs rather than separately requiring CLEC-specific cost studies. Section 51.711 requires that reciprocal compensation rates be "symmetrical" and defined as: "rates that a carrier other than an incumbent LEC assesses upon an incumbent LEC for

the transport and termination of local telecommunications traffic equal to those that the incumbent LEC assesses upon the other carrier for the same services." Pursuant to the existing FCC rules, therefore, ILECs must charge the CLECs a rate for reciprocal compensation based on the ILEC's costs, and the CLEC must likewise charge the ILEC the same rate (based on the ILEC's costs). There is no option under the FCC's rules for an ILEC or state commission to impose asymmetrical rates for traffic deemed to be "local." Because the FCC rules require that reciprocal compensation rates be based on the level of the ILECs costs, ICG argues that in any event, the Commission does not need to know the current level of actual CLEC costs. Therefore, in the scoping memo for this proceeding, we did not ask CLECs to produce separate cost studies, but rather, sought inquiry concerning the cost characteristics of those functions that are involved in the termination of traffic. Our long standing policy as originally adopted in D.96-03-020 has been not to impose separate cost study requirements on CLECs, recognizing the administrative burden such studies would impose, and the lack of market power that CLECs exercise. Therefore merely because the CLECs did not produce their own comprehensive cost studies in this proceeding, we should not conclude that the CLECs failed to make a proper evidentiary showing. Thus, the cost principles underlying TELRIC provide a relevant standard in evaluating the costs of terminating ISP traffic by either the ILEC or the CLEC.

Federal TELRIC rules require that the cost of a "particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element."[30] Thus, it is consistent with the TELRIC methodology to apply one uniform TELRIC-based

[30] See FCC Local Competition Order at § 682.

rate for all calls that are subject to termination using the same facilities. The CLECs have shown that they terminate ISP calls using the same facilities as are used to terminate other local calls. Therefore, there is no basis to disaggregate one particular customer class, such as ISPs, and treat them as having a different cost since to do so would contradict the TELRIC principles of costing based upon the total cost of a discrete network element.

The reciprocal compensation rates currently in place for interconnection agreements between Pacific and various CLECs are based on the TELRIC as adopted in the OANAD proceeding applicable to Pacific's unbundled network elements (UNEs) for terminating switching and transport costs. The rates are reciprocal in that each LEC pays that rate to the other LEC for any local traffic that is terminated. Thus, no separate cost studies are performed for the CLEC, but the ILEC's TELRICs are deemed to be acceptable proxies of CLEC costs for purposes of paying reciprocal compensation. The UNE rates for Pacific are disaggregated into two components, as follows:

$.007 per call

$.00187 per minute

The per-call rate is fixed irrespective of the duration of a particular call. The per-minute rate reflects those costs that vary in relation to the volume of traffic terminated. Thus, costs that are not traffic sensitive would not be relevant in evaluating a carrier's actual cost of terminating local traffic subject to reciprocal compensation.

The Commission has not yet established TELRICs for Verizon in OANAD. The rates that the Commission approved in GTE California's (now Verizon's) interconnection arbitration with AT&T in January of 1997 have effectively served as default rates for UNEs and for reciprocal compensation insofar as parties have been able to opt into those rates. The reciprocal compensation

charge established in that proceeding and set forth in the interconnection agreement with AT&T is a per-minute charge of $.003629/minute. (*See* Tr. 29:1-30:10 & Exh. 5 (GTE/AT&T Interconnection Agreement Excerpt) at Attachment 14, App. 1, p. 4.) Although Verizon has, in some instances, been able to negotiate different rates, this ability is limited by the availability of the AT&T rate.

Verizon's reciprocal compensation rate is typically set equivalent to its end-office switching UNE.[31] Unlike Pacific, Verizon only one blended UNE rate for end-office switching,[32] rather than separate rates for "terminating" and "originating" switching. As result, the rate includes the cost of using certain origination-related switch equipment – such as dual tone multi-frequency (DTMF) receivers and tone generators[33] – that a CLEC does not use when it terminates calls to ISPs. Verizon argues that having origination functions in the reciprocal compensation charge overstates the termination cost regardless of the type of traffic at issue. We believe that if origination functions are included in Verizon's reciprocal compensation charge for ISP-bound traffic, those costs should be stripped out.

We find no necessity that CLEC costs must exactly equal the ILEC costs in every respect to justify the payment of reciprocal compensation for ISP calls. By virtue of being an aggregate of total costs, the TELRIC measure may well

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[31] See Exh. 5 (GTE/AT&T Interconnection Agreement Excerpt) at Attachment 14, Appendix 1, pp. 2, 4 (setting both the "end office switching" rate and the "local interconnection" rate at the same level exception for rounding ($.0036286 versus $.003629)).

[32] See *id.* at Attachment 14, Appendix 1, p. 2.

[33] Exh. 2 (ICG/Starkey) at 16.

deviate from the specific cost for any one particular type of call termination. If the CLEC is able to terminate ISP-bound calls at a cost below the TELRIC rate, that, in itself, is no basis to conclude that the CLEC is earning a "windfall" or is not entitled to be compensated by the ILEC at all. The use of TELRIC as a standard for compensation on a reciprocal basis provides a benchmark against which all carriers must manage to provide terminating services at the lowest cost possible.

To the extent that ISP calls may have certain characteristics that distinguish them from voice calls, we conclude that difference, in itself, doesn't justify excluding ISP calls from reciprocal compensation. The ILECs repeatedly compare ISP calls to voice calls, but fail to definitively compare ISP calls with other data-related or other specialized business-related calls. If ISP calls were to be earmarked for disparate treatment from all other local calls, we would also need to consider whether such treatment constituted a form of unfair discrimination. We would need to consider whether certain types of calls other than voice calls that may exhibit similar characteristics to ISP calls such as longer duration or higher volume such that they should also be exempted from reciprocal compensation, or at least compensated at a different rate.

The ILECs however, claim, to use the term "windfall" and "subsidy" to characterize the difference between the TELRIC rates paid and the true costs incurred by the CLECs to deliver ISP traffic. The ILECs do not precisely quantify a standard as to how much of a profit margin may constitute a "windfall." The ILECs' primary argument appears to be, however, that the marginal CLEC profit is so huge, however, that a precise threshold need not be drawn.

Based on our review of the parties' allegations, we do not find evidence of huge differences in the cost of termination of ISP-bound traffic compared with that of all other local traffic. Whatever differences may exist between specific calls on an individual basis, however, do not rise to the level of

"windfall" profits. In the context in which it is used here, the term "windfall" implies an unearned profit advantage unfairly gained by the CLECs at the expense of the ILECs. Yet, in order to conclude that such reciprocal compensation was unearned, we would have to find that the CLEC collects the funds without performing a commensurate function or service of benefit to the ILEC or its customer. Yet, on the contrary, the CLEC does perform a necessary function. If the CLEC did not terminate the ISP call, the call originator would be unable to access the ISP or to utilize its services. In the alternative, the call originator would have to find an ISP served by the ILEC and the ILEC would have to terminate the call, itself, incurring its own TELRIC in the process.

We consider below and respond to the specific arguments presented that termination cost of ISP calls is significantly less than other local calls.

3. Specific Factors Claimed to Result in Lower CLEC Costs for Terminating ISP Calls

a) Differences in Network Configurations and Facilities Used

(1) Parties' Positions

Pacific argues that while the ILEC is required to maintain a network that serves all types of customers over a wide geographic area, CLECs may pick and choose which types of customers to serve, such as ISPs. As a result, Pacific claims that CLECs can limit the number of facilities they build, and deploy lower-cost networks with less functionality than Pacific's. Pacific argues that ISPs are frequently collocated in the CLEC central offices. In those cases, argues Pacific, no CLEC loop plant is involved in transporting traffic to the ISP. Thus, Pacific believes that it is placed at an unfair competitive disadvantage by having to compensate CLECs at a rate that significantly exceeds the CLECs' true costs.

Pacific also claims that CLECs are able to lower their termination costs for ISP traffic through the use of new generation routing products that do not use a traditional voice circuit switch to deliver ISP traffic. Witness Hamilton describes this new generation equipment as an "Internet Gateway." Hamilton testified that this new technology enables CLECs to replace several pieces of equipment used in traditional switching as well as the Class 5 switch. Because this equipment is designed specifically for ISP calls, Hamilton states that it obviates the need for many of the traditional voice switching features. This technology generally cannot be used to originate traffic, but merely receives and routes traffic to an ISP. Because of the reduced functionality, Hamilton argues that it follows that these Internet Gateways will have lower costs.

Moreover, Pacific claims that the configuration of the CLECs' facilities forces Pacific to incur additional transport and switching costs in delivering ISP traffic to CLECs' points of interconnection, rather than directly to ISPs.[34] Pacific claims it incurs the additional costs because CLECs have generally chosen not to establish a point of interconnection in each of the local calling areas where ISPs originate calls. Pacific argues that CLECs often design their networks to have only a few points of interconnection per LATA, thus causing Pacific significant transport costs to haul traffic from the originating point to these locations. Pacific argues that the typical configuration of CLEC networks is actually adding costs to Pacific. Moreover, Pacific claims it is not equitable that when Pacific serves an ISP, it has to fund termination costs from the services ISPs buy or from other customers, while CLECs may look to Pacific to cover their costs.

[34] Exh. 106 (Pacific/Scholl), pp.11-12; Exh. 123 (Pacific/Hamilton) pp. 5-9, 11-13, 18-19.

Various CLECs actively participating in this proceeding provided testimony and written comments on the configuration of their facilities used to transport and terminate ISP traffic. Level 3 states that the principal architectural differences between ILEC and CLEC networks arise largely in the relative mix of the switching and transport components. ILECs generally have a hierarchical network, so that within a given geographical area, multiple end offices subtend on tandem offices. These tandem offices aggregate traffic and network management functions associated with the area served by each of the end offices subtending it. Because the ILECs have millions of subscribers statewide, they can afford to deploy relatively efficient, large-scale switching systems in close geographic proximity to their customers.

Level 3 argues that while many CLEC networks are physically configured differently than ILEC networks, they provide the same functionality for all local communications traffic, including ISP bound traffic. Pac-West witness Selwyn explained that CLEC and ILEC networks are generally comprised of three principal components: subscriber loops, end office switches, and interoffice network, which are trunking and switching facilities that provide interconnections among end offices and between end offices and other carriers. In contrast, a CLEC's customer base is only a small fraction of the size of the ILEC's customer base. As such, in lieu of using tandems and multiple end offices, CLECs typically deploy a small number of large switches which perform both tandem and end office functionalities to serve a comparable geographic area to that of the ILEC. CLECs transport their customers' traffic over relatively large distances. Because transport costs have become far less distance-sensitive with the use of high-capacity fiber optics, enormous amounts of capacity can be deployed at little more than the cost of more conventional transport capacity sizes.

ICG witness Wood acknowledges that ISPs may use a variety of facilities to connect with the serving LECs switch, but denies that the choice of facilities or methods of connection has any impact on the usage sensitive costs which are the only relevant costs recoverable through reciprocal compensation. ICG claims that that the characteristics of the particular facility used by a LEC to deliver traffic to its own customers is irrelevant to the rate for reciprocal compensation because the costs of these facilities are non-traffic sensitive, and are recoverable from end users. Moreover, regardless of what type of facilities are used to provide service for a specific type of customer, i.e., ISPs, when a CLEC uses a fully functional switch, it is purchasing the ability to service all line types. At the switch matrix level, which is the basis for costing out reciprocal compensation rate, a call path is assigned at the individual channel level, without reference to the type or capacity of the physical facility connecting the switch to the end user.

ICG's network is built upon an architecture that can generically be referred to as a SONET Ring architecture. These SONET rings are comprised of fiber optic facilities and multiplexing equipment that provides for aggregating, connecting and dispersing an individual customer's traffic to a larger SONET data stream. Witness Starkey testified that ICG employs a common network that is used to service its entire customer base. Both general business customers as well as data customers (primarily ISPs) use the same switches, fiber optic backbone and SONET rings for accessing the network, as well as for originating and terminating calls. Starkey testified that ICG employs fully functional Class 4/5 circuit-based switches (i.e., Lucent Technologies' 5ESS) that are shared by all of its local exchange customers. Focal denies that it uses the new technologies referenced by Pacific in terminating ISP traffic in California. Focal